

WHAT IS CLAIMED IS:

1. A method of inspecting a target object to be inspected, comprising the steps of:

5 bringing about a fritting phenomenon in a part of the insulating film formed on an inspection electrode of the target object to be inspected so as to break a part of the insulating film;

10 bringing an inspecting probe into electrical contact with the surface of a part of the inspection electrode, the insulating film of the part of the inspection electrode having been broken by the fritting phenomenon; and

15 inspecting the electrical characteristics of the target object by using a tester connected to the inspecting probe.

2. The inspection method according to claim 1, wherein said step of breaking a part of the insulating film comprises the steps of:

20 bringing a probe into contact with the inspection electrode of the target object to be inspected; and

applying a voltage between the probe and the inspection electrode so as to bring about the fritting phenomenon in the insulating film formed on the surface of the inspection electrode.

25 3. The inspection method according to claim 1, wherein said step of breaking a part of the insulating film comprises the steps of:

bringing a first probe and a second probe into contact with the inspection electrode of the target object; and

5 applying a voltage between the first probe and the second probe so as to bring about the fritting phenomenon in the insulating film formed on the surface of the inspection electrode.

4. The inspection method according to claim 3, further comprising the step of inspecting the
10 electrical characteristics of the target object to be inspected by utilizing as the inspecting probe at least one of the first probe and the second probe in contact with the surface of a part of the inspection electrode, the insulating film of the part having been broken by
15 the fritting phenomenon which has been brought about within the insulating film.

5. The inspection method according to claim 4, wherein said step of inspecting the electrical characteristics of the target object to be inspected by
20 utilizing at least one of the first probe and the second probe as the inspecting probe comprises the step of electrically disconnecting the probe not used as the inspecting probe, from at least one the tester and the inspection electrode.

25 6. The inspection method according to claim 5, wherein said step of electrically disconnecting the probe from the inspection electrode comprises

the step of electrically separating the probe not utilized as an inspecting probe, from the inspection electrode.

5 7. The inspection method according to claim 6, wherein said separating step is performed by utilizing at least one of a piezo element, a bimetal, and an electrostatic element.

8. An inspection apparatus of a target object to be inspected, comprising:

10 a power source circuit for applying a voltage to a part of the insulating film formed on an inspection electrode of the target object so as to form a predetermined potential gradient in at least a part of the insulating film, a fritting phenomenon being formed
15 in the insulating film by the predetermined potential gradient so as to break a part of the insulating film;

 an inspecting probe that is brought into electrical contact with the surface of a part of the inspection electrode, the insulating film of the part
20 of the inspection electrode having been broken by the fritting phenomenon; and

 a tester connected to the inspecting probe so as to inspect the electrical characteristics of the target object to be inspected.

25 9. The inspection apparatus according to claim 8, further comprising a current limiter for limiting the current flowing between the probe and the inspection

electrode.

10. The inspection apparatus according to claim 8,
wherein said current limiter for forming a
predetermined potential gradient in at least a part of
5 the insulating film comprises:

a first probe and a second probe each brought into
contact with the inspection electrode of the target
object to be inspected; and

a power source circuit for applying a voltage
10 between the first probe and the second probe, said
voltage serving to bring about a fritting phenomenon in
the insulating film formed on the surface of the
inspection electrode.

11. The inspection apparatus according to
15 claim 10, wherein at least one of the first probe and
the second probe is formed of at least one material
selected from the group consisting of tungsten,
palladium and a beryllium-copper alloy.

12. The inspection apparatus according to claim 8,
20 further comprising a controller for controlling the
power source circuit, and a communication circuit for
connecting the controller to the tester.

13. The inspection apparatus according to
claim 12, wherein said means for forming a
25 predetermined potential gradient in at least a part of
the insulating film is incorporated in the tester.

14. The inspection apparatus according to

claim 13, wherein said current limiter for limiting the current flowing between the probe and the inspection electrode is incorporated in the tester.

5 15. The inspection apparatus according to claim 13, wherein said power source circuit for forming a predetermined potential gradient in at least a part of the insulating film comprises:

10 a first probe and a second probe, which are brought into contact with the inspection electrode of the target object to be inspected; and

 a power source for applying a voltage between the first probe and the second probe, said voltage serving to bring about a fritting phenomenon in the insulating film formed on the surface of the inspection electrode.